

AIR QUALITY ELEMENT

CITY OF LA HABRA

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PART II

AIR QUALITY

BACKGROUND REPORT / POLICY DOCUMENT

Data, Analysis, Goals and Policies for
Air Quality Issues

I. INTRODUCTION

A. Role of the Background Report

The South Coast Air Basin has been determined by the Environmental Protection Agency as having the worst air pollution problem in the Nation. The Basin includes the City of La Habra and all of Orange County, the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. These poor air quality conditions have produced some of the earliest and strictest control measures on transportation and land use. Due to the critical nature of the air pollution problem the California Clean Air Act signed into law in 1988, requires the adoption and implementation of transportation control measures by local agencies to reduce motor vehicles emissions. Air pollution is a problem that does not have jurisdictional boundaries, thus requiring the cooperation of all levels of government: local, regional, state, and federal.

The South Coast Air Quality Management District (SCAQMD) is the agency for this region charged by the State with the responsibility of bringing air quality into compliance with health and safety standards as established by the Federal Environmental Protection Agency (EPA).

The SCAQMD was traditionally responsible for reducing emissions from stationary sources such as commercial and industrial sites while the California Air Resources Board (ARB) was responsible for reducing emissions from motor vehicles. In recent years, the Governor and the Legislature have enacted laws extending the SCAQMD regulatory authority to address indirect sources. By State law, Southern California Association of Governments (SCAG) is responsible for the preparation of land use, transportation, and energy conservation control measures to be utilized in the Air Quality Management Plan (AQMP). The 1991 AQMP is built on the 1989 Plan and is designed to achieve all State and Federal requirements.

The role of this Element is to identify issues and data to comply with the federal and state regulations, while maintaining internal consistency with the goals, policy and objectives of all the elements which make up the La Habra General Plan 2020. La Habra's Air Quality Plan is designed to:

1. address the issues of maximum air pollution levels;
2. comply with the requirements of the 1991 Air Quality Management Plan for the South Coast Air Basin;
3. reduce the health and economic impacts of air pollution;
4. respond to and end nuisances identified by citizens complaints.

B. Federal and State Requirements for the Air Quality Element

State Code Section 65303 authorize cities to adopt additional elements into their general plans, as they deem necessary to achieve certain goals and objectives for each individual city.

Due to the critical nature of the air quality problem in the South Coast Air Basin, Federal and State Agencies have mandated the development of a regional air quality Plan to attain Federal and State ambient air quality standards. The 1991 AQMP update carries out these Federal and State mandates through 126 control measures, each aimed at reducing air pollution.

Local governments have the primary responsibility for implementing transportation and land use control measures because cities have the legal authority to carry them out. Specifically, the AQMP directs local governments to implement policies that will achieve an eight percent reduction regionwide in emissions from reactive organic gases and oxides of nitrogen. The AQMP provides options from which cities can select to meet the emission reduction goals using their land use decision making authority. Some of the options call for local governments to adopt policies into the general plan or through implementation of ordinances. In order to be consistent with the AQMP/SIP (State Implementation Plan) the general plan should include programs to implement transportation, land use and **energy** conservation control measures contained in the AQMP. These control measures are the basis for many of the goals and policies of the La Habra General Plan 2020.

The Air Quality Management Plan (AQMP), Growth Management Plan (GMP), Regional Mobility Plan (RMP) and the Regional Housing Needs Assessment (RHNA) are an integrated package developed by SCAG, that provides a blueprint for the way the region will improve its transportation mobility, its patterns of growth, and its air quality.

All the goals and policies of this Element are consistent with the Regional Plans (Air Quality Management Plan (AQMP), Growth Management Plan (GMP) and Regional Mobility Plan (RMP).

C. General Plan Consistency and Relationship to other General Plan Components

The La Habra General Plan 2020 was adopted on July 31, 1990. This Plan contains goals, policies and programs which are intended to guide the City's land and development decisions into the twenty-first century. Several goals, policies and programs of the La Habra General Plan 2020 are intended to promote the attainment of air quality goals as established in the 1991 Regional Air Quality Management Plan. The Air Quality Component is consistent with the goals, policies, programs, analyses and data utilized in other components of the La Habra General Plan 2020.

The Air Quality Element is addressed in the Land Use/Circulation, Housing, the Conservation/Open Space as well as in the Regional Transportation/Growth Management Element. The relationship of the Air Quality Element and other components of the General Plan is summarized below.

Land Use/Circulation

The Land Use Component of the General Plan addresses the existing and future distribution of land uses, standards for that development and the interconnection of uses to the circulation system. This component encourages the orderly development and expansion of commercial and industrial uses based upon current conditions and future projects to achieve a better job/housing balance.

Projected growth in population, housing and employment, as well as the unbalanced distribution of housing and jobs within the region will contribute to an increase in transportation demand. Mobile source emissions account for 60% of the air pollution emissions in the Basin.

The objective of the job/housing balance is to reduce vehicle miles traveled (VMT) by locating jobs and housing closer together. SCAG has divided the region into 25 subregions. Two of these subregions are in Orange County: Northwest Subregion and Southeast subregion. For each subregion SCAG has forecasted the distribution of population, housing and employment to the year 2010. La Habra is located in the Northwest Subregion and more precisely in Regional Statistical Area (RSA A-36 Fullerton) which is considered to be already highly urbanized.

According to the SCAG 1989 Growth Management Plan, the ratio of jobs to housing for a balanced subregion is 1.22 by 2010. A Housing rich subregion would have a lower ratio and a job rich subregion would have ratios higher than 1.22.

To achieve a better job/housing balance the Land Use Element designates land uses which allows for "mixed use" development. The purpose of mixed use development is to bring work places and services closer to where people live. Also the Land Use component as well as the Housing Element encourages the development of a mix of housing type to match a variety of employment opportunities in the community thus, reducing the length of trips and encourage the use of other modes of transportation. Also, the Housing Element establishes programs that allows for density bonuses, granny units in single family lots and second units on single family designated lots.

The Circulation component of the Community Development Plan calls for the maintenance and improvement of a reliable and uncongested transportation system that safely accommodates traffic generated by the different land uses. At the same time the Circulation Element seeks to minimize the adverse effects on the environment and on public health. By providing for a convenient and effective transportation system and maintaining acceptable levels of service the City is reducing congestion on City streets and reducing the amount of emissions generated by idling motor vehicles. The Circulation component also includes sections that address bicycle trails and other alternative modes of transportation.

Conservation/Open Space

This component of the Environmental Management Plan provides data regarding existing conditions and trends relating to the management of the City's natural and urban environment. The goals policies and programs of the Conservation and Open Space Element deals with the conservation of natural and urban environment including water, energy and solid waste as well as provisions for the maintenance and provision of open space and landscape areas for all new and major renovation development projects. This component also encourages the utilization of energy efficient architectural design concepts as well as the utilization of energy efficient landscaping design which are consistent with the 1991 Air Quality Management Plan which encourages energy conservation measures.

Growth Management

This component of the Regional Plan has been developed to satisfy one of the requirements for Measure M compliance. The purpose of the Growth Management Element is to ensure that the growth and development in La Habra is based upon the City's ability to provide an adequate circulation system.

This Element calls for the development of policies and programs for the establishment of traffic level of services standards, a development mitigation program and a development phasing program. This component also includes an implementation program for annual monitoring.

D. Related Plans and Programs

Assembly Bill 471

Assembly Bill 471 and Assembly Bill 1791, requires every urbanized city and county with a population of 50,000 or more, to adopt a Congestion Management Plan (CMP) to reduce traffic congestion. The CMP requirements include traffic level of service standards, public transit service and coordination standard, trip reduction program, and a seven year capital improvement program for traffic. These requirements must be consistent with the Regional Mobility Plan which is a component of the Air Quality Management Plan. The purpose of the CMP is to develop strategies to relief congestion which is one of the strategies contained within the Air Quality Plan. By implementing the CMP, the City is reducing reactive organic gases and carbon monoxide caused by idling vehicles and vehicles travelling on congested roadways.

Measure M

Orange County voters approved Measure M in 1990 to allocate additional funds to provide needed transportation facilities in Orange County. Measure M specifically authorized a half cent retail sales tax increase for a period of 20 years effective April 1, 1991. The monies received from Measure M will be use by local jurisdictions for use on local and regional transportation improvements and maintenance projects. As part of the measure to improve the transportation needs in Orange County, the 20-year Transportation Plan emphasizes a Comprehensive Growth Management program to meet the increasing demand on Orange County's transportation system. Measure M requires that each jurisdiction adopt a Growth Management Element that includes: traffic level of services; development mitigation programs; development phasing and annual monitoring program and to comply with, but not necessarily include participation in interjurisdictional planning forums, development of a 7-year capital improvement program, address housing options and job opportunities, and adopt a TDM ordinance. Most of these actions are also strategies proposed in the regional AQMP to improve air quality.

II. EXISTING CONDITIONS AND TRENDS

A. Review of Existing Air Quality Programs

The City of La Habra has been very active in the development of programs and strategies to improve air quality. Below is a description of actions that the City has taken to reduce air pollution and improve the quality of life for the residents of La Habra.

1. TRANSPORTATION

Trip Reduction

1. Alternative Work Week and Telecommunications (City Employees)

The City has adopted and implemented a Trip Reduction Plan in accordance with Regulation XV established by the South Coast Air Quality Management District. Regulation XV requires that all businesses consisting of over 100 employees reduce the number of vehicles reporting to the job site. The City is required to obtain an Average Ridership Level of 1.5. La Habra in the first year of implementation increased the AVR from 1.11 to 1.42. The City has committed two staff members to coordinate and operate the Trip Reduction Plan. The City has committed approximately \$51,000 to this plan for fiscal year 1990-1991. La Habra will continue to encourage alternative modes of transportation to meet and maintain an Average Vehicle Ridership level of 1.50. The City's latest Trip Reduction Plan which just received SCAQMD approval shows an average vehicle ridership level of 1.51. It is our understanding that La Habra is the first City in Orange County to achieve a 1.51 AVR level and maybe the first City in Southern California.

The City has also established a telecommute program. Management staff not able to participate in a carpool have been given the opportunity to participate in this program. One day every two weeks, the individual works from home. There are currently eight individuals involved in this program. The City is looking to expand this program in the future if it proves to be beneficial to the City. The City has up to this point spent approximately \$41,266 over the last two years for this program.

2. Non-Work Trip Reduction

The City, through the North Orange County Credit Union has a program that provides direct deposit of City employees' paychecks. There are currently 142 (about 57%) of the employees that make use of this program. Through this program approximately 1 percent of non-work vehicle trips are reduced.

3. Home Occupation

On August 15, 1989 the City Council adopted a Home Occupation Ordinance to allow residents to conduct business as an accessory use within a dwelling unit for all residential zones. The Ordinance allows for the employment of no more than two employees other than a member of the family occupying the unit. The permit allows for a wide range of businesses with only a few restrictions. The ordinance prohibits regular commercial deliveries to or from the residence. The business shall not cause traffic in greater volumes than would normally be expected in a residential neighborhood, nor shall the use require additional parking spaces than provided on-site. The City has issued 530 permits since the Ordinance was adopted.

By allowing home businesses in residential zones, residents have the opportunity of telecommuting or utilizing flexible work hours, thus reducing traffic congestion during peak hours, reduce vehicle miles and reduce air emissions from their vehicles.

4. Mixed-Use Developments

The City allows mixed-use development through the Transitional Residential/Commercial land use designation. Such designation was created with the implementation of the La Habra Boulevard Specific Plan. Mixed-use development is also allowed in the Commercial/Professional land use areas. The purpose of mixed use development is to bring work places and services closer to where people live.

In addition to mixed use development, the Land Use Element of the General Plan proposed 46.81 acres of neighborhood commercial designated land. This land use is evenly distributed throughout the City, within convenient distance to residential areas. Commercial uses in this category are designed to serve the daily or frequent commercial needs of the residents in the immediate vicinity. The proximity of these commercial centers to the residential areas allows residents to walk or bicycle instead of driving their vehicles and also to combine trips which will reduce mobile source emissions and daily non work trips.

5. Pedestrian and Bicycle Routes in the General Plan

Bicycle routes are included in the Circulation Element of the General Plan. The Element responds to the need to provide safe and efficient travel-ways for cyclists. Efforts are made where possible to provide bikeways separate from the roadways so that cyclists may be protected from fumes and fast moving vehicles.

The bikeways are consistent with the County's Master Plan of County Bikeways, which have several routes throughout the City. There are three classes of bikeways:

- Class I: off-road bike trails;
- Class II: on-road bike lanes, delineated by painted stripes;
- Class III: routes identified by signing.

There are Class III routes through the northwest and central portions of the City. There is also a Class I trail that run from Idaho Street to Portola Park along an existing railroad line. A Class II route is being proposed along Lambert Road from Beach Boulevard to Brea on the east. Class II routes will be provided only where sufficient right-of-way exists. A Class I trail is also being proposed for the Beach Boulevard-Imperial Highway alignment through the City.

The City has with significant projects required dedication for bicycle and pedestrian routes. For the La Habra Hills Development, a bicycle and pedestrian trail system will be located within the right-of-way of Idaho Street which connects the La Habra Hills Specific Plan and the neighborhood park with community-wide recreational facilities. This trail will ultimately be expanded to the south City limit offering a trail connection to the Los Coyotes Regional Park within the City of Fullerton. The City is using funding from a number of sources and has worked at improving the pedestrian system in the City. Walkways are provided adjacent to nearly all public roads in the City and public improvements along street frontages (curbs, gutter, and sidewalks) are required for all new developments in the City.

Mobile Source Emissions

6. TDM Ordinance

On April 16, 1991, the City adopted Ordinance # 1407 establishing Transportation Demand Management requirements for specified new developments and major building expansion. The Ordinance encourages greater vehicle ridership in future projects, reduce traffic congestion and improve the air quality. All applicable developments (which causes employment of 100 persons or more) will be subject to the TDM Ordinance. The Ordinance calls for applicable developments to provide facility improvements: Preferential parking for carpool vehicles, bicycle parking, shower facilities, information on transportation alternatives, rideshare vehicle loading areas, vanpool vehicle accessibility, and bus stop improvements.

7. AB 2766

On April 16, 1991 the City of La Habra adopted Ordinance # 1408 with an amendment to the City Code Chapter 4.48 dealing with mobile source air pollution reduction. The City supports adoption of motor vehicle registration fees to reduce air pollution from mobile sources. The fee will be used to develop and implement programs that reduces air pollution. The City will pursue additional funding under this program.

Traffic Flow Improvements

8. Signal Synchronization

The City has established the Traconet system which is currently coordinating the traffic signals on La Habra Boulevard, Lambert Road and Harbor Boulevard. Traconet is a microprocessor based, distributed intelligence network for coordinating and controlling the flow of vehicular traffic through a signal system. It provides a means to monitor traffic activity remotely, to distribute traffic control intelligence and to communicate traffic data in real time throughout a signal system area.

The central computer is located in the Engineering Department, Administration Building, Civic Center. The Traconet master controller is located at the intersection of La Habra and Harbor Boulevard. The interconnect system operates through the use of telephone connections.

There are sixteen intersections currently on the system. The limits of the system are as follows: (1) La Habra Boulevard - Idaho Street to Roscoe Street; (2) Lambert Road - Idaho Street to Harbor Boulevard; and (3) Harbor Boulevard - Stearns Avenue to Edwards Drive.

2. PARTICULATE MATTERS

9. Particulate and Fugitive Emission

In order to reduce fugitive emissions, the City encourages developers to clean up a construction site, clean up the access road and public roadways.

The Public Services Department already allocates resources of manpower and equipment for the rapid clean up needed to remove any debris that may have collected following a storm. The City also maintains some control over vegetation on our open channel storm drains in order to maintain storm flows and at the same time prevent sidewall erosion and dust emissions.

3. ENERGY CONSERVATION

10. Local Government Energy Conservation

The City is committed to conserving energy and in reducing pollution associated with the production of electricity. The City has made significant improvements to the City's facilities in order to conserve energy. Both lighting and HVAC modifications have been accomplished with the help of Southern California Edison and the Southern California Gas Company. The City buildings have had windows tinted using the most efficient type of optimum cooling. All overhead lighting fixtures bulbs have been replaced with "watt mizer" energy saving lights and all street lights were changed to energy saving lights. City buildings have a preventive maintenance program by an outside contractor to keep building running at best possible efficiency and all buildings also have an override switch to prevent air conditioning/heating from operating after work hours.

11. Waste Recycling

On August 6, 1990 the City started a curb side recycling program for single family homes. The recycling materials collected consisted of newsprint, aluminum, tin cans, some plastics and glass bottles and jars. From preliminary data, the voluntary program has reduced the curb collection tonnage taken to the landfill by about 10%. This probably equates to a reduction in the total waste stream of about 3%.

The City is also investigating alternatives to expand the recycling programs to apartments and local businesses. The Public Services Department has completed a survey of local businesses which has determined that most of the businesses are currently doing some type of recycling, primarily with corrugated paper and wood waste. Based on 1990 figures, the total waste diverted from residential, commercial and industrial uses was 20,926 tons, which equates to a reduction in the total waste stream by approximately 37.25%.

On May 21, 1991 the City of La Habra approved a Source Reduction and Recycling Element. This Element is a comprehensive document that describe the existing waste generation and diversion quantities and compositions, as well as the programs that will be undertaken to divert additional waste.

The Street Tree Maintenance Division of the Public Services Division is presently recycling the wood chips remaining after tree pruning and removals in our local parks and other areas.

12. Fleet vehicles Maintenance

The City maintains a strict service program for all fleet vehicles. All vehicles are serviced on a regular basis to ensure that vehicles are continually running at peak performance. The highest quality of gas is used, and tires are replaced often to ensure good tread.

13. Clean Fuels

The City is currently investigating the possibility of switching their lawn mowers from gas to propane fuel. In the past the City has tested and operated fuel efficient vehicles. From 1971 to 1972 the City had on an experimental basis a truck running on compressed natural gas. From 1970 to 1988 the City had a portion of their units running on propane gas and from 1980 to 1987 the City had a total of 26 units running on compressed and natural gas. Due to the bankruptcy of the company that provided parts and services for those vehicles, the City discontinued their use. The City will continue to investigate the feasibility of using alternative clean fuel vehicles. The City applied for AB 2766 Discretionary funds for the purchase of five alternative fuel vehicles.

4. STATIONARY SOURCE EMISSIONS

14. Environmental Review Program

According to the CEQA guidelines, a project will have a significant impact on the environment if it violates any air quality standard, substantially contributes to an existing or projected air quality violation, or exposes sensitive receptors to substantial concentrations of pollutant. As part of the environmental review process the City determines if a project would have an impact on local and regional air quality. The City has amended its environmental review process and has included provisions that deals with air quality as well as source reduction.

15. Permit Checklist

Through a cooperative effort, the District and the City designed a checklist in accordance with AB 3205 which would accompany each building permit application. The checklist would provide the necessary information to determine if further AQMD involvement is necessary prior to the issuance of City building permits, or the conditions in which permits may be issued. The checklist streamlined the process and expedited projects that would otherwise be delayed for AQMD compliance. This form served as an example to other jurisdictions and is now used regionwide.

16. Monitoring Station

Regional air quality information is collected by the SCAQMD at 37 air monitoring stations throughout the air basin. One of these stations is located in La Habra at the City Yard. This station provides the District with information on carbon monoxide, ozone, nitrogen dioxide, and sulfur dioxide emission levels for north Orange County.

B. Climate and Meteorology

The City of La Habra is located within the South Coast Air Basin. The topography of the Basin gives the area a great potential for trapping and accumulating air pollutants. Geographical location and climatic conditions are the major contributors to the dispersion and/or concentration of air pollution. Within this Basin contaminants are emitted at a fairly constant rate throughout the year. Yet the pollution concentrations actually present in the air fluctuate widely from day to day, season to season, location and time of the day depending on the meteorological conditions. Air pollution forms either directly or indirectly from pollutants, from a variety of sources. These sources can be natural, such as oil seeps, vegetation, or windblown dust. Emission may also result from combustion, as in automobile engine, from evaporation of organic liquids, such as those used in the coating and cleaning processes, or through abrasion, such as from tires on roadways.

Conditions that contribute to the concentration of pollutants in the area are temperature inversion, sunlight, wind, and topography. During the summer months, temperature inversion occurred when descending warm air forms a semipermanent inversion layer over the cool marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. This warm air tends to trap air pollutants near the ground not letting it disperse upward, causing high pollutant concentrations near the ground. During a typical summer, pollutants trapped under the inversion layer build up under cloudy conditions, but are not converted to smog because there is not enough ultraviolet energy passing through the clouds. When the clouds burn off, typically later in the day, sunlight begins the process of converting the previously trapped gases into photochemical smog. In addition, light winds during the summer months limit ventilation and foster the development of photochemical ozone, and usually creates a May to October "smog season," when air pollution can be quite apparent.

In the winter, inversion layers are based at ground level during the night and early mornings, leading to increased concentrations of pollutants such as carbon monoxide. Passenger vehicles contribute to about 70% of the concentration of carbon monoxide in the winter.

Sunlight is an important factor in the formation of secondary pollutants such as ozone and photochemical smog. Since the photochemical process depends on the time of the day, these pollutants can be formed miles away from the emission source. High ozone concentrations are most probable between the months of May and October. Passenger vehicles contribute to about 39% of the summer ozone problem.

The direction and intensity of the prevailing winds is one of the major contributors to the concentration and/or dispersion of pollution. Very light winds (4 to 6 miles per hour), limits the basin capability to disperse air pollution horizontally. Typically, the net on-shore transport is greater in the summer and net off-shore transport is greater in the winter.

Additional information on climatic and meteorological factors is discussed in the Natural Environment section of the La Habra General Plan 2020.

C. Pollution Components

Through the 1970 Federal Clean Air Act, the Environmental Protection Agency (EPA) established air quality standards that are regulated by the South Coast Air Quality Management District (SCAQMD), the Southern California Association of Governments (SCAG) and the Air Resources Board (ARB).

Air pollution is composed of many substances generated by natural and man made sources. Over one hundred varieties exists which can have different effects on different people at different concentrations. In practice pollutants are divided into two classes: gases and particulate matter (either solid or liquid.)

Most contaminants are by-products of the combustion process or unburned fuels. There are six federally regulated air pollutants. Four of them: Carbon Monoxide, Nitrogen Dioxide, Ozone, and PM10 exceeded the federal standards. The other two air pollutants: Lead and Sulfur Dioxide met the standards. The standards are designed to protect the most sensitive person from illness or discomfort with a margin of safety. The six regulated pollutants are described below.

Carbon Monoxide (CO)

The most significant gas affecting Orange County's air quality is Carbon Monoxide. It is a primary pollutant in that it can be damaging. CO is a colorless and odorless gas formed from incomplete combustion of fossil fuels such as gasoline, oil and other petroleum products. Carbon monoxide can seriously affect the respiratory system and can impair central nervous system functions of people exposed to high concentrations. CO is especially dangerous indoors, where there is inadequate ventilation. If exposure is high enough, headaches, dizziness, unconsciousness and death can result. While ambient air levels of CO in Orange County seldom exceed Federal air quality standards, growth may be accompanied by an increase in this pollutant. Motor vehicles are responsible for over 70% of the CO emissions in Orange County.

Nitrogen Dioxide (NO2)

NO2 is a visible yellow-brown gas formed from fuel combustion under high temperature or pressure; together these components are referred to as nitrogen oxides (NOx). Nitrogen dioxide (NO2) is one of the main contributors to the development of photochemical smog. NO2, like CO, causes respiratory problems which may cause irritation of nose, throat and eyes, and may also reduce resistance to infection. In the Basin, about 85 percent of the nitrogen oxides come

from cars and trucks. The State's automobile control program has already succeeded in making a substantial reduction, with additional progress indicated as the controls become more universal. Photochemical Smog- Ozone(O₃)

Photochemical air pollution or photochemical smog is a relatively new kind of air pollution. It results from a chemical reaction which takes place in the atmosphere between directly emitted (NO_x) and reactive organic gases (ROG) under the influence of sunshine. ROG is formed from combustion of fuels and from evaporation of organic solvents. Various factors affect this process, including the quantity of gases present, the volume of air available for dilution, the temperature and the amount of sunshine. The largest fraction of photochemical smog is Ozone, a colorless gas. Ozone in the South Coast Air Basin is approximately three times the federal standard. The greatest source of the gases that trigger photochemical smog is the automobile. Long term ozone concentrations can increased asthma attacks, reduce lung functions, reduce resistance to infections, impair athletic performance, deteriorate rubber, paint, plastic, and cause damage to plants and agriculture.

Particulate Matter

Dust, mist, ash, smoke and fumes are some of the liquid or solid particles found in the atmosphere: natural dust and pollens and both industrial and transportation emissions predominate. Smoke, composed of carbon and other products of incomplete combustion, is the most obvious form of particulate pollution. Industrial processes cause particulates to form, and liquid aerosols and solid particles form photochemically in the atmosphere when sunlight reacts with waste gases. Industrial dust is formed by grinding or pulverizing materials, as in cement production. Earth moving operations, especially construction, cause large amounts of dust to enter the air. For air pollution control purposes, PM₁₀ is the subject of State and Federal Standards.

PM₁₀

PM₁₀ are small suspended particles, 10 microns or less in diameter. Major components of PM₁₀ are nitrates, sulfates and dust particles. These particles are emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as the wearing of tires and brake linings, through wind erosion of soil or chemical reaction. Annual average PM₁₀ concentrations in the South Coast Air Basin were about 80% above the federal standard in 1987. These particles may carry carcinogens and other toxic compounds.

Lead

Lead is a toxic fuel additive which is emitted into the air from vehicle exhaust. Other sources of lead include the manufacturing of batteries, paint, ink, ceramics, ammunition and secondary lead smelters. Lead concentration can damage paint on buildings and can also cause neurological damages and behavior abnormalities. In recent years the use of leaded gasoline has been phased out.

Sulfur Dioxide

Sulfur dioxide is a colorless gas derived from burning of fuel containing sulfur. Sulfates are formed through photochemical reaction of sulfur dioxide and oxidants. Concentrations of sulfates which exceed 9 micrograms per cubic meter (ug/m³) can aggravate respiratory and heart problems, and can cause corrosion of paint, metals and damage to plants.

In addition, California has set standards for ethylene, hydrogen sulfide and vinyl chloride. All but sulfate are localized problems.

Table 1 summarizes 1987 regional pollutant emissions and projected emissions for 2000 and 2010.

Table 1

Pollutant	1987 Base Year (tons/day)	2000 Baseline (tons/day)	2010 Baseline (tons/day)
ROG	1375	1006	1065
NO _x	1208	918	997
SO _x	134	127	130
CO	4987	3118	2718
PM	1075	1427	1573

In 1988, the SCAQMD Board adopted a policy calling for attainment of all the federal and state health standards at the earliest practicable date, but no later than;

- * December 31, 1996 for nitrogen dioxide;
- * December 31, 1997 for carbon monoxide;
- * December 31, 2007 for ozone and PM10.

There are interim goals for ozone and PM10 to be met by the year 2000. For ozone the goal is to reduce exposure by 70% and reduce concentra-

tions to no higher than stage I emergency episode level (0.20ppm). For PM10 the goal is to attain federal standards.

The District has classified pollution sources into two major categories: mobile and stationary sources. Mobile sources move from place to place and include light and heavy duty vehicles, ship, trains and airplanes. Mobile Sources contributes to 60% of the air pollution. According to a 1981 study by the California Air Resources Board (ARB), the home-to-work trips are the largest category of motor vehicle emissions.

Stationary sources include those emissions from a relatively permanent location. These locations include residential/commercial services, and industrial and manufacturing plants which contribute to 40% of the air pollution.

In addition, air pollutants are identified as primary pollutants or secondary pollutants. Primary pollutants are those emitted directly from the source and include carbon monoxide, nitrogen oxides, particulates, and sulfur oxides. Secondary pollutants are those formed by chemical and photochemical reactions in the atmosphere.

D. South Coast Air Basin Conditions

Air Quality in Orange County is determined by the complex interaction of emissions from human activities and natural sources with air pollutant dispersion phenomena. These activities, combined with meteorological factors produce our unique local and regional air quality. Regional air quality information is collected by the South Coast Air Quality Management District (SCAQMD) at 37 air monitoring stations throughout the South Coast Air Basin. One of these monitoring stations is located in La Habra at the City Yard. This station monitors emissions of carbon monoxide, ozone, nitrogen dioxide, and sulfur dioxide.

Figure 1 indicates the Basin's 1990 maximum pollutant concentrations as a percent of the state and federal standard. The figure reflects the fact that maximum ozone standards were exceeded over three times as frequently in the Basin than any other area in the Nation. The Basin was the only area in the country to exceed the federal Nitrogen Dioxide standard. The highest annual average of PM10 concentrations was also recorded in the Basin as well as the carbon monoxide standard with two and one half time higher than the next worst area in the Nation.

III. MAJOR ISSUES AND PRELIMINARY POLICY DIRECTION

Impacts and Effects

On days of reduced atmospheric ventilation, the interrelationship of air pollutants and climatic factors is most critical. On these days, pollution accumulates because of the simultaneous occurrence of low temperature inversion and low wind speed. Although these conditions may occur throughout the year, more than forty percent occurs between June and September.

The potential for high contaminant levels varies seasonally for many contaminants. For example, during late spring, summer and early fall, light winds, low mixing heights and sunlight combine to produce conditions favorable for the production of ozone. When fairly deep marine layers frequent the air basin during spring and summer, sulfate concentrations achieve yearly peak concentrations.

The highest concentrations of carbon monoxide, nitrogen dioxide, and nitrates are measured during the months of November, December and January. These high concentrations are caused by extremely low inversion and air stagnation during the night and early morning hours.

The primary concern of air pollution emissions is the impact on public health. Pollution also affects vegetation, buildings, and materials. Concentrations of carbon monoxide can be harmful to the public health because of its ability to displace oxygen in the blood stream. High concentrations of carbon monoxide can restrict a healthy person from physical activities and can seriously affect people with respiratory and heart problems, increasing the risk of chest pain (angina) and heart attack. High concentrations of CO can impair central nervous system functions and can cause dizziness and fatigue. CO is not known to have adverse effects on vegetation, visibility or materials.

A study done by the Air Resources Board (ARB) reveals that concentrations of 0.3 ppm or more of ozone for more than two hours combined with some periodic exercise can result in some health problems. Some persons exposed to these conditions not only developed measurable physiological and biochemical changes but felt physically ill and were unable to perform their normal jobs during exposure and for several hours thereafter.

Children, Senior Citizens, and people with respiratory problems (such as allergies, asthma, and heart diseases) are the groups more sensitive to air pollution impacts. The least sensitive persons tested did not develop respiratory problems or physiological changes but did exhibit biochemical changes. It was also found that children, senior citizens, persons with pulmonary problems and workers performing heavy exercise, experienced breathing difficulties and physiological changes at concentrations near 0.12 ppm of CO.

School age children, college students, and people working outdoors are the groups with the highest exposure to ozone. School age children as a group will experience the greatest benefit from meeting the Federal and State ozone standards since, while they constitute 20% of the basin's population, over 40% of the symptoms occur in their group. According to a June 1989 SCAQMD report it is estimated that ozone causes Basin residents to experience each year more than 120 million days of cough, more than 190 million days of eye irritation, nearly 180 million days of sore throats, over 100 million days of headaches, nearly 65 million days of chest discomfort, and nearly 16 million minor restricted activity days.

Concentrations of nitrogen dioxide can reduce lung functions and cause lung tissue damages, accelerating the aging of lungs and lowering resistance to respiratory infections. High concentrations of sulfur dioxide can irritate the upper respiratory tract. Concentration of sulfates which exceed 9 to 10 micrograms per cubic meter (ug/m3) can aggravate heart and lung diseases, asthma, and pulmonary lung function of school age children. Also, children exposed to high levels of sulfates and other particulates have increased rates of acute respiratory diseases such as bronchitis and pneumonia.

Air pollution can be harmful on vegetation. Ozone can cause damage to leaf tissue, needles, and to the soil. Sulfur oxide in combination with moisture and oxygen, can yellow the leaves of plants. Pollution also reduces growth, disrupt the reproductive process and increases susceptibility to a variety of diseases. Pollution also has adverse effect on buildings and materials. Concentrations of sulfur dioxide is associated with corrosion of paint and metals and damage to marble, iron and mortar.

The South Coast Air Quality Management District monitors contaminants on a daily basis, in order to identify and forecast unfavorable air quality conditions ("episodes"). The California Air Resources Board (ARB) has defined Episode levels of Ozone air pollution as follows:

Health Advisory Levels	Occur when hourly ozone concentrations equals or exceed 0.15 ppm. At this level people are advised to avoid prolonged, vigorous outdoor exercise.
First Stage Episode	When hourly ozone concentrations equal or exceed 0.20 ppm, SCAQMD advise persons with special health problems to take precautions against exposure and schools are notified to discontinue strenuous activities. During this stage the District request the use of carpooling and the reduction of unnecessary driving.
Second Stage Episode	During a predicted or attained second stage episode, the measures are mainly voluntary, such as the use of carpooling and reduction of unnecessary driving. Other measures such as prohibiting the burning of combustible refuse is mandatory.
Third Stage Episode	When conditions are predicted or attained for this stage, a state of emergency is called. If SCAQMD efforts do not reduce a third stage episode, the state is called to take action under the State Peace Time Emergency Plan.

The air quality conditions are forecasted and measured through the Pollutant Standards Index (PSI). PSI relates to air pollution concentrations in parts per million (ppm) to a numerical scale ranging from 0 to 500. Episodes criteria are available for ozone, ozone/sulfur dioxide, carbon monoxide, sulfur dioxide, and ozone/sulfate. A violation of Federal standard in any pollutant occurs when any of the pollutants exceeds 100 on the scale. Episodes are called when the PSI reaches 200.

The City of La Habra has prepared an emergency episode plan for Stage II and Stage III smog alert in compliance with regulation VII.

Cost of Air pollution

One way to measure air pollution impacts is in terms of economic cost. Cost can include medical expenditure to treat pollution-related illness; decrease in crop production; and increased expenditure to clean, repair or replace pollution damaged equipment and materials.

According to the 1991 Socio-economic report the total daily per capita cost of quantifiable and unquantifiable measure is \$.84. Therefore, it will cost each person less than one dollar per day to have clean air in the Basin. Failure of local governments to assist in the improvement of air quality would substantially degrade and reduce the quality of life for residents in the basin. Improvement of the quality of air is a regional concern that requires the cooperation and coordination of regional agencies and all jurisdictions within the Basin. The AQMP is designed to accommodate the population growth expected in the next twenty years, and at the same time achieve state and federal air quality standards. If all of the applicable control measures are not implemented by local governments, or population projections are exceeded, the air quality standards cannot be achieved. The existing moratorium on location of stationary sources in the basin will continue, and federal funding and other permits may be denied until air quality standards are met.

Air Quality Management Plan (AQMP)

The AQMP is a regional long range plan for the South Coast Air Basin to reduce air quality impacts of growth in population, housing and employment. In an effort to solve the Basin's air quality problems the SCAQMD and SCAG adopted the first AQMP in 1979. The Plan contained measures which the Air Resources Board (ARB) and the federal Environmental Protection Agency (EPA) gave high priority in order to improve the air quality in the region.

The Plan was prepared in accordance with the Lewis Air Quality Act of 1976 and the Federal Clean Air Act (CAA) Amendment of 1977. A revision of the AQMP was made in 1982 which the EPA disapproved because it could not show attainment by the 1987 deadline. In response, the SCAQMD prepared the 1989 AQMP which the District and SCAG adopted in March of 1989. On August 15, 1989, the ARB approved the 1989 Plan which is a Federal attainment Plan. The AQMP calls on local governments to achieve an 8 percent reduction in reactive organic gases and nitrogen oxide emissions. The 1991 AQMP update which is built into the 1989 AQMP is designed to achieve State and Federal health-based air quality standards within 20 years. In addition the 1991 update deals with the global climate change issue, addresses the stratosphere ozone depletion problem, and evaluates the problem of air toxic. The AQMP identifies a comprehensive control program that would lead the South Coast Air Basin into compliance with all federal air quality standards by the year 2007. The AQMP identifies 126 control measures that are needed to attain Federal and State clean air standards. Each of these measures is aimed at reducing a specific pollutant. Also, the AQMP includes contingency measures that will be considered if the control measure strategies fail to meet standards. The control measures potentially available for implementation by the year 2007 were categorized into three tiers:

Tier I: Full implementation of known technological and effective management practices.

Control measures under Tier I are action-oriented and are expected to be implemented within the first five years with nearly all measures achieving full implementation by the year 2000. Tier I measures will bring the basin into compliance with the Federal standards for carbon monoxide and nitrogen dioxide. The Tier I measures consist mainly of stationary source control. The Plan identifies several new indirect source control measures in the 1991 AQMP that are structured so they can be implemented by local governments. Local governments will also have primary responsibility for many of the Tier I transportation, land use and energy conservation measures. Specifically, the AQMP requires local governments to implement new regulatory ordinances, administer changes to the project review process, assist with enforcement and data collection for monitoring effectiveness, forge new partnerships with other governmental agencies to develop energy conservation standards, and seek administrative changes in the way they operate. Many of the policies in this Element are based on these control measures.

Tier II: Significant advancement of today's technological applications and vigorous regulatory intervention.

Tier II control measures are composed mostly of extensions or more stringent applications of Tier I measures. These measures are expected to be implemented in the next 10 to 15 years. Actions are dependent upon additional funding or new legislative authority. Tier I and Tier II measures will bring the basin into compliance with the Federal Standard for PM10.

The District in conjunction with numerous agencies will be primarily responsible for the achievement of Tier II reduction targets. The District will also implement all measures related to stationary sources.

Tier III: Development of new technology.

Achievement of Tier III goals depends on substantial technological advancements and breakthrough that are expected to occur throughout the next two decades. The District in conjunction with federal, state, local, and regional agencies, will be responsible for ensuring that Tier III strategies are implemented, and that the emission reduction goals are met.

Review of Tier I Control Measures

Tier I contains a menu of control measures that local governments will implement under the 1991 AQMP (Table 3). The following measures have been reviewed and are not applicable to the City of La Habra:

1. Control of Dust Emissions From Agricultural Tilling

Agricultural tilling is used for soil preparation and maintenance. Tilling includes plowing, harrowing, land leveling, disking and cultivating. La Habra is already built out and does not have any designated agricultural areas that could be subject to this control measure.

2. Special Activity Centers.

La Habra does not have any special activity centers, special event centers, airports, and/or regional shopping centers that could attract a large number of people.

3. Auto Use Restrictions

The goal of this program is to reduce the number of single auto-occupancy trips and vehicle miles travelled in order to achieve a reduction in vehicular emissions and pollution during special events for large capacity center, or street closure during peak period. The City does not have large capacity or special event centers that could attract a large number of motorists.

The following measures as indicated in the 1991 AQMP, require local governments to adopt ordinances, implement programs and/or amend zoning and building codes as appropriate. The City has reviewed these measures and has proposed programs and possible implementation as appropriate.

1. Parking Management

The goal of this program is to reduce transportation source emissions by inducing shifts in transportation modes. The City has adopted Ordinance # 1407 requiring preferential parking for carpool and vanpool, bicycle parking, bus stop improvements and shower facilities for new facilities which causes employment of 100 persons or more. The City will investigate the feasibility of extending this program to businesses below the 100 employees threshold.

2. Employer Rideshare and Transit Incentive

This program focuses on vehicle trip reduction and traffic mitigation measures for home to work trips. This measure is coordinated with the Air Quality Management Plan measure 17: Growth Management. The job/housing balance policy of the growth management measure seeks to promote mixed-use developments at single or proximate locations in order to reduce the need for long distance commuting trips, thus making transit, bicycling, and walking more attractive commute alternatives. The City has implemented a rideshare program and provide assistance to all business within the community who request assistance. The City continues to review and require the installation of bus stop improvement for new development as appropriate.

3. Merchant Transportation Incentives

The goal of this program is to reduce the number of single auto-occupant non-work trips, increase non-work transit use and alternative modes of transportation to help alleviate traffic impacts of existing and new major retail developments. The City has required information booths be installed within new large retail centers which provides information to the public on alternative modes of transportation. The City will investigate the possibility of utilizing other forms of advertising to educate the public on trip reduction strategies.

The implementation of the following measures will require ongoing cooperation between the District and the City of La Habra.

1. Eliminate Excessive Car Dealership Cold Starts

Significant number of new and used car dealers start their vehicles daily to avoid battery failure and to ensure a smooth cold start during customers test-drives. This measure would require car dealers to limit engine start-ups throughout their lots to once every two weeks. The District would adopt this control measure and enforce it through an incentive program or advertising campaign. The City could assist the District in educating the dealership within the community as to their responsibility under this measure. The City will cooperate with the District in the implementation of this program.

2. Eliminate Excessive Curb Idling

The proposed strategy will reduce emissions from curb idling and would allow a maximum idle time of 3 minutes for all motor vehicles on private and public property. Those vehicles that required the engine to operate a loading, unloading or processing device are exempt from this measure. The District would adopt and enforce this measure. The City will cooperate with the District in disseminating information to the general public.

3. Eliminate emissions from advertising vehicles

Mobile advertising companies use motor vehicles for the purpose of advertising products and services. The proposed strategy to reduce emissions from this source is to phase out the use of dedicated advertising vehicles, or required them to use zero- emission vehicles. The District would implement this proposed regulation as a transportation control measure. The City would assist the District in monitoring this control measure.

4. Environmental Review Program

According to the CEQA guidelines, a project will have a significant impact on the environment if it violates any air quality standard, substantially contributes to an existing or projected air quality violation, or exposes sensitive receptors to substantial concentrations of pollutant.

Minimum standards would be established to be used in assessing a project's air quality impacts, determining whether an impact is significant, quantifying mitigation measures, establishing emission calculation procedures for forecasting future emissions, evaluating air toxic impacts, performing exposure and risk assessments for air toxic, and identifying minimum mitigation measures for regionally significant projects

The City currently circulates regionally significant project EIRs to SCAG for conformity review. When the City adopts a conforming Air Quality Element, the conformity review will become the responsibility of the City. The District will adopt a rule that will establish standards for the air quality analysis in environmental documents and institute a review program in which the District will validate the adequacy of the air quality analysis for local governments. The City is currently in the process of reviewing the Districts proposed standards and will work with the District in developing those standards.

5. Trip Reduction for Schools

Regulation XV will be expanded to reduce student trips to high schools, colleges, and universities. There are approximately 165 high-schools and over 94 colleges in the basin which accounts for the nearly one million daily trips attributed to high-school seniors and college students commuting to school.

The District would enact Regulation XV to include a provision for reducing student trips to high schools, colleges and universities. The rule would require that the school district incorporate students into their Regulation XV trip reduction plan, in addition to the faculty and staff already covered under the plan. By achieving a 1.5 AVR for all trips to the school, 25% of the student trips would be reduced. The City will assist the School District through shared information or assistance in developing a plan.

6. Enhanced Regulation XV

The District would expand Regulation XV to comply with the AVR requirements of the California Clean Air Act. The rule would institute more stringent rideshare requirements lowering the threshold to below 100 employees and increasing the AVR over a period of years. Local Governments will continue to have the option of implementing the program at the local level. The City will continue to offer information/assistance to the business community in preparing Regulation XV plans.

7. Truck dispatching, rescheduling & rerouting programs

The District would adopt rules that would establish requirements for new and existing facilities that generate large numbers of truck trips in order to reduce truck related emissions. Local Governments could be certified to administer this program. This program would require a regional interjurisdictional cooperative effort with the District. The City currently participates in an interjurisdictional forum consisting of north Orange County cities.

8. Registration Program

The District currently collects data on trips through the Regulation XV program. In addition, they will collect trip data through the permit process for stationary sources. These data sources need to be augmented with additional data from businesses that are not subject to regulation XV or subject to the District stationary source regulation.

The program will work in two tiers: (1) the District will collect trip related data on indirect sources through the regulation XV program. Based on an assessment they will identify incomplete information. (2) the District will work with local governments to collect the data need to complete the information. Local governments that participate in the program would receive a portion of the funds to cover the cost of their participation. The City will assist the District by providing available data for this control measure.

9. Eliminate Leaf Blowers

The District will prohibit the use and sale of leaf blowers beginning in 1994 and implement regulations to prohibit the operation. The City could assist or take the lead with enforcement.

IV. GOALS AND POLICIES

GOAL: Promote air quality that is compatible with the health, well being, and enjoyment of life for all the residents of La Habra.

POLICY:

Continue working with federal, state and regional agencies in attaining clean air standards.

Program: Continue to participate in the development of a countywide air quality implementation plan and remain actively involve in appropriate SCAG and SCAQMD work on the regional AQMP.

POLICY:

Increase participation in transportation demand management (TDM) programs both in public and private sector.

Programs:

Encourage employers to develop and implement work trip reduction plans that include employee ridesharing, modified work schedule, preferential carpool and vanpool parking or any other trip reduction approach that is consistent with the AQMP for the South Coast Air Basin.

Continue to implement transportation demand management ordinance which encourage greater vehicle ridership in future projects, reduce congestion and improve air quality.

Implement TDM Ordinance to require physical improvements on-site to encourage the use of alternate modes of transportation.

Assist employers in developing rideshare programs.

Participate in ETC organizations.

POLICY:

Encourage changes in travel behavior to reduce mobile source emissions including reducing the number of home to work trips and the use of single occupant vehicles.

Programs:

Promote and encourage ridesharing activities, including such programs as preferential parking, park and ride lots, in-vehicle driver information, operation improvements, alternative work week and flexible working hours and other trip reduction strategies among employers.

Continue to require sidewalk improvements for new developments and improvements. Establish park and ride facility for work and non-work trip reductions.

Continue to implement the use of alternative work schedules and telecommunication among City employees that is consistent with the South Coast Air Quality Management District's Regulation XV.

Include bicycle routes in the General Plan that will support the employer and non-work trip bicycle transportation plans.

Sponsor bicycle safety and education programs.

Research current shipping and receiving plans for companies that ship or receive high volumes of good by commercial trucks. Encourage companies to limit operations during non peak periods to relieve congestion on major arterials and reduce emissions.

POLICY:

Manage parking supply to discourage auto use, while ensuring that economic development goals will not be sacrificed.

Programs:

Investigate short term and long term parking management strategies at governmental and private facilities in ways that discourage single occupancy vehicles and rewards high vehicle occupancy without placing the city at a competitive disadvantage.

POLICY:

Increase citizens awareness and participation efforts to reduce air pollution.

Programs:

Increase the City's public information activities regarding air quality and regional issues.

Provide assistance to local businesses interested in developing a trip reduction plan for its employees.

GOAL:

Provide a balance of residential, commercial, industrial, recreational, services and institutional uses, to satisfy the needs of the social and economic segments of the population and achieve clean air while still permitting reasonable planned growth.

POLICY:

Assist in the balance of jobs and housing by attempts to reduce the length of commuter trips. Support mixed-use development which discourage automobile dependency.

Programs:

Improve job/housing balance through review of new development and redevelopment projects which require discretionary review.

Develop human resources through education and training to the residents labor force, so businesses can count on a ready and appropriate supply of labor.

Take a pro-active role in developing an interjurisdictional approach to planning for major development projects in adjacent communities. Participate in the cooperative planning efforts with local jurisdictions within the city region.

POLICY:

Manage growth by insuring the timely provision of infrastructure to serve new development.

Program:

Incorporate phasing policies in development plans to achieve timely provision of infrastructure(particularly transportation facilities) to serve development.

POLICY:

Identify zoning and land use practices that could have a beneficial impact on air quality

Programs:

Identify feasible and effective tactics to improve air quality. Review zoning code and identify any zoning practices which now preclude uses which could have a beneficial impact on the environment. Investigate the feasibility of mapping land uses associated with sensitive receptors such as schools, day cares, medical facilities, park and recreational areas, convalescent and rest homes etc.

GOAL:

Reduce emissions from residential and commercial energy consumption.

POLICY:

Improve air quality by maximizing energy efficiency through land use and transportation planning and use of renewable resources.

Programs:

Investigate the feasibility of requiring that all new swimming pool water heater install low NOx heaters with solar assistance and existing gas-fired water heaters that require replacement be retrofitted with low NOx units.

Investigate the feasibility of requiring that all new residential, commercial and industrial developments install low NOx water heaters with solar assistance. Conventional natural gas-fired water heaters would still continue to be used to supplement the solar component.

The City shall continue its policy of maintenance, and repair of vehicles and equipment. Investigate the feasibility of converting vehicle fleet to clean fuel vehicles.

Continue to reduce overall energy use at local public facilities and continue the preventive maintenance program.

Promote energy conservation and disseminate information about energy conservation measures.

GOALS:

Provide for a diverse and energy efficient transportation system incorporating all feasible modes of transportation for the reduction of pollutants.

POLICY:

Cooperate and participate with regional, county, and city efforts to develop an efficient regional transportation system which reduces Vehicle trips and vehicle miles travelled.

Programs:

Continue to improve traffic signals with automated traffic surveillance and control systems at appropriate intersections.

Implement and maintain a circulation system that is consistent with the county Master Plan of Arterial Highways, guides development and reflects the local needs of the circulation system.

POLICY:

Coordinate overlapping and related components of the State mandated Congestion Management Plan and any other regional plan with the regional Air Quality Plan.

Program:

Establish a coordination process for relating parallel actions undertaken as part of the Congestion Management Plan and any other regional plan.

Establish and maintain an implementation and monitoring system of air quality programs. Integrate related monitoring and reporting systems that overlap with the Air Quality Plan.

PARTICULATE EMISSIONS

GOAL:

Achieve a reduction in particulate emissions from paved and unpaved roads, parking lots, and road and building construction.

POLICY:

To the extent possible, the City shall attempt to reduce PM10 emissions from construction, street cleaning, demolition and debris hauling to assist the region meet Federal standards Programs: Identify and regulate unpaved areas, parking areas and maneuvering areas in order to reduce PM10.

Review existing street cleaning policies and equipment and evaluate modifications to reduce surface sanitation pollution.

Eliminate traffic hazards and delays through street maintenance, rapid emergency response, and debris removal.

Reduce ROG and PM10 emissions by reviewing the building code periodically and incorporate low emission construction methods and materials as they become feasible.

Continue to enforce procedures that control dust from construction, building demolition and grading. Adopt and implement procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots.

V. AIR QUALITY IMPLEMENTATION

Implementation of the proposed programs and actions is discussed below. Implementation schedule and responsible agencies for these programs is presented in Table 4.

Programs and Actions:

I. Regional Plan Consistency

A. Establish Coordinated Approach

1. Continue to participate in the development of a countywide air quality implementation plan and remain actively involve in appropriate SCAG and SCAQMD work efforts on the regional AQMP.

II. Transportation

A. Transportation Demand Management

Transportation Demand Management comprise those efforts which are intended to change people's travel behavior to make more efficient use of infrastructure. The City will proposed the following actions:

1. Continue to implement the Transportation Demand Management Ordinance which encourage greater vehicle ridership in future projects, reduce congestion and improve air quality.
2. Promote and encourage ridesharing activities, including such programs as preferential parking, park and ride lots, in-vehicle driver information, operation improvements, alternative work week, flexible working hours and other trip reduction strategies among employers.
3. Continue to implement ordinance requiring that walkways, parking spaces for bicycle, employer shower and locker facilities be provided in new commercial and industrial developments to support use of bicycling and walking.

B. Trip Reduction

1. Encourage employers to develop and implement work trip reduction plans that includes employee ridesharing, modified work schedule, preferential carpool and vanpool parking or any other trip reduction approach that is consistent with the AQMP for the South Coast Air Basin.

Traffic coming to and from work congest our arterials and roadway during peak morning and afternoon hours. Most cars are single occupant, adding to the air pollution and to the

traffic congestion. Emissions from these vehicles can be reduced by altering work schedules and planning our driving to reduce traffic congestion and improve air quality. Two alternative work schedules commonly used are the 4 day/40 hours work week, and the 9 day/80 hours work schedule. The City employees currently utilize the 9/80 work schedule for those employees involved in the rideshare program.

Telecommuting is another alternative that can help the situation on our roads. Telecommunications can take the form of working from home, or working from a telecommuting center near the home. The "telecommuter" includes the self-employed worker and the independent contractor working from home. The City currently utilize a telecommute program for executive management.

Other transportation strategies involve reducing non-work related trips by offering merchant transportation incentives such as public transportation passes, reducing parking time, and providing convenient spaces for carpools. The implementation of this program shall result in a 30% net decrease in work related trips and 5% net increase in non-work related trips. Other measures like provision of convenient parking spaces for people who rideshare, parking management strategies and facilities for bicycle and pedestrian also reduced work and non-work trip related trips. The City is currently implementing a number of these alternatives.

C. Park and Ride Facility

1. Establish park and ride facilities for work and non-work trip reductions. The City is investigating the utilization of this type of facility. The City applied for the AB 2766 Discretionary funds to provide for a park and ride facility along Whittier Boulevard.

D. Bicycle Routes General Plan

1. Include bicycle routes in the General Plan that will support the employer and non-work trip bicycle transportation plans.

E. Bicycle Safety and Public Information

1. Assist groups in establishing bicycle safety and education programs. Provide Bike Maps that include Class I off road bike trails, Class II on-road bike lanes and Class III bike routes, as well as rules of the road, bicycle safety and other valuable information such as the benefits to the environment.

F. Parking Management

1. Investigate short term and long term parking management strategies at governmental and private facilities in ways that discourage single occupancy vehicles and rewards high

vehicle occupancy without placing the City at a competitive disadvantage.

G. Public information and Assistance

1. Increase the City's public information activities regarding air quality and regional issues.

To increase public awareness and participation and reduce air emissions from mobile and stationary sources, the City is in the process of increasing its public information and education activities. The importance of public information is to reach the citizens and businesses in the community, increase understanding and change practices which worsen the air and the environment.

2. Provide assistance to local businesses interested in developing a trip reduction plan for its employees.

The City is available to work with the Chamber of Commerce and group of businesses interested in developing trip reduction plans.

H. Traffic Signal Coordination

1. Continue to improve traffic signals with automated traffic surveillance and control systems at appropriate intersections.

Poor traffic flow on arterials significantly reduces travel speeds, increases the frequency of stops, adds to vehicular delay, and contributes to increased emissions. On arterials, improperly timed signals and inadequate intersection channelization produce thousands of hours of added delay. Signal synchronization improvements can reduce arterial delay by increasing roadway capacity through more effective utilization of roadway widths and increase LOS in terms of vehicle speed and number of stops. Hi-tech computerized and interconnected signal systems can further reduce the amount of recurrent vehicular delay, and serve as well, by permitting remote control of signal timing, as an effective traffic management tool in combating congestion resulting from non-recurrent congestion.

I. Circulation System

1. Implement and maintain a circulation system that is consistent with the county Master Plan of Arterial Highways and reflects the local needs of the circulation system.

J. Related Programs

1. Establish a coordinated process for relating parallel actions undertaken as part of the Congestion Management Plan and any other regional plan.
2. Establish and maintain an implementation and monitoring system of air quality programs. Integrate related monitoring and reporting systems that overlap with the Air Quality Plan.

K. Air Quality Monitoring Report

1. The City shall prepare an annual monitoring report indicating the City's progress in the implementation of the AQMP measures. The report will provide guidance for updating the General Plan. This report will review the City effortstowards achieving clean air standards in the Basin.

III. Land Use

A. Growth Management & Job/Housing Balance

1. Improve job/housing balance through new development and redevelopment discretionary project reviews and action.

Review projects to determine whether the development will have a positive or neutral impact on job/housing balance for regional significant projects.

Determine appropriate mitigation measures for regional significant projects that worsen VMT and job/housing balance ratios.

Environmental review process, include an analysis of development impact on sensitive receptors and local and regional air quality for regional significant projects.

Air Quality mitigation measures to be used when considering future regional significant projects.

Encourage and promote mixed use development to reduce length of vehicle trips.

Licensing and permits for home occupation.

2. Incorporate phasing policies in development plans to achieve timely provision of infrastructure (particularly transportation facilities) to serve development.
3. Develop human resources through education and training to the residents labor force, so businesses can count on a ready and appropriate supply of labor.
4. Take a pro-active role in developing an interjurisdictional approach to planning for major development projects in adjacent communities. Participate in the cooperative planning efforts with local jurisdictions within the city's GMA region.
5. Identify feasible and effective tactics to improve air quality. Review zoning code and identify any zoning practices which now preclude uses which could have a beneficial impact on the environment.

B. Sensitive Receptors

1. Investigate the feasibility of mapping land uses associated with sensitive receptors such as schools, day cares, medical facilities, park and recreational areas, convalescent and rest homes etc.

The City will investigate the possibility of mapping land uses associated with sensitive receptors. When a sensitive receptor is proposed, the City will consider their proximity to pollution sources and require mitigation measures as appropriate. If a land use must be located close to a sensitive receptor, then the project shall mitigate the impact.

IV. Energy Conservation

A. Swimming Pool Water Heater

1. Investigate the feasibility of requiring that all new swimming pool water heater install low NOx heaters with solar assistance and existing gas-fired water heaters that require replacement be retrofitted with low NOx units.

Currently there are approximately 500,000 residential and commercial swimming pools and hot tubs in Southern California using fuel at an average of about 65 cubic feet per day per unit. A large portion of these pools and tubs are heated with gas-fired water heaters. New pools and hot tubs are being built everyday, increasing natural gas consumption. The consumption of natural gas results in the emissions of NOx. This measure is directed at controlling NOx emission from these sources. One alternative to the natural gas water heater is the solar water heater which does not emit NOx.

The solar system would consist of flat-plate solar collectors or other equivalent solar technology that comply with current SCAQMD regulations on NOx emissions from such water heaters.

The program should also include a provision that existing gas-fired water heaters that require replacement would be retrofitted with low NOx units. This program would control NOx emissions from natural gas fueled water heaters and reduce the cost for heating water. At the present time the District does not have a specific rule for swimming pool water heaters. The District may seek the cooperation of local jurisdictions to include the solar water heating requirement in local building code.

B. Water Heater (Residential, Commercial, Industrial)

1. Investigate the feasibility of requiring that all new residential, commercial and industrial developments install low NOx water heaters with solar assistance. Conventional natural gas-fired water heaters would still continue to be used to supplement the solar component.

According to the 1991 AQMP revision there are approximately 3.53 million residential natural gas-fired water heaters in the South Coast Air Basin using fuel at an average rate of 65 cubic feet per day per unit. Additionally, there are approximately 15,700 small commercial boilers of 2 MM Btu/hr heat input or less. By controlling the use of these natural gas water heaters, a savings of millions of cubic feet of natural gas and a reduction of tons of NOx would be accomplished. On a yearly basis, solar energy could provide about 52 percent of the energy needed for a given water heating system, with the remaining 48 percent provided by the conventional natural gas unit. This program is directed at controlling NOx emissions from these sources. One alternative to the use of natural gas water heater is solar water heater, which does not emit NOx.

This measure requires the installation of low NOx water heaters with solar assistance on all new multi-family and single family residences (over 2,000 square feet) and all new commercial buildings. The solar energy systems would consist of flat-plate solar panels or other equivalent solar technology that comply with current SCAQMD regulations on NOx

emissions from such water heaters. Conventional natural gas-fired water heaters would still continue to be used to supplement the solar component. The District would be required to seek the cooperation of local jurisdictions to include the solar water heating requirement in local building codes. Proposed adoption date for this measure is 1992 and proposed implementation is 2006.

C. City's Vehicle Fleet

1. The City shall continue its policy of maintenance, and repair of vehicles and equipment. Investigate the feasibility of converting vehicle fleet to clean fuel vehicles. The City applied for the AB 2766 Discretionary funds to introduce five alternative fuel vehicles to the City's fleet.

D. Energy Conservation Public Facilities

1. Continue to reduce overall energy use at local public facilities and continue the preventive maintenance program.

E. Energy Conservation

1. Require, where feasible, all new buildings to be designed and oriented in an energy efficient way.

F. Energy Conservation Education

1. Promote energy conservation and disseminate information about energy conservation measures.

V. Particulate Emissions

A. Dust Control.

The goal of this measure is to reduce fugitive dust emissions, preventing the deposition of materials on roadways through controls placed on sources of PM10.

1. Review existing street cleaning policies and equipment and evaluate modifications to reduce surface sanitation pollution.
2. Continue to eliminate traffic hazards and delays through street maintenance, rapid emergency response, and debris removal.
3. Continue to implement procedures that will control dust from construction, building demolition and grading. Review other measures of dust control and approved as appropriate.

Watering is the most effective measure to control emissions from construction, but due to the water shortage, other measures could be implemented:

- (a) Where appropriate, require the pavement of all roads, parking lots, and vehicular maneuvering areas as soon as possible;
 - (b) Encourage developers to maintain the natural topography to the extent possible to eliminate the need for extensive land clearing, ground excavation, grading, and cut and fill operations;
 - (c) Stop all grading activities during periods of high wind (i.e. greater than 30 MPH);
 - (d) Require the installation of truck and automobile wheel washers; and
 - (e) Revegetate construction site as soon as feasible;
4. Review and possibly implement procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots.

B. Emissions from Building Material and Methods

Particulate matter as defined by the Environmental Protection Agency (EPA) as either dusts or airborne photochemical precipitates. Construction of residential, commercial and industrial buildings as well as methods and materials used are the main source of PM10 and ROG emissions. Materials that emit ROG include: sealer, primers, paints for wood, stucco, plaster and wallboard, wood stains, concrete curing compounds, etc.

Construction methods which emit PM10 include: sawing wood and metals, grinding concrete and metals, sanding wood, etc. Proposed adoption date for this measure is 1994 and proposed implementation is 1998.

1. Reduce ROG and PM10 emissions by reviewing the building code periodically and incorporate low emission construction methods and materials as they become appropriate.



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